Amendments to the Claims

- 1 8. (Cancelled).
- 9. (New) A method of identifying a series of single circuit movements to re-route a network from a set of n actual circuits CA_i (i=1, ..., n), each satisfying a corresponding demand R_i to a set of feasible intermediate circuits CI_i which continue to satisfy the demands R_i and which best approximate a series of target circuits CT_i, comprising:
 - (a) initializing the circuit set CI to CA;
 - (b) for each demand R_i still to be processed
 - (i) calculating one or more candidate replacement circuits CI_i, each candidate replacement circuit CI_i satisfying the demand R_i and having a lower cost difference with respect to the corresponding target circuit CT_i than the current circuit CI_i satisfying the demand R_i;
 - (ii) replacing the current circuit Cl_i with the candidate replacement circuit Cl_i having the least cost; and
 - (iii) marking the criterion R_i as having been processed; and
 - (c) identifying the sequence with which circuits Cl_i were replaced as the series of single circuit movements to re-route the network.
- 10. (New) The method of claim 9 wherein each circuit comprises one or more legs connecting two or more nodes, and wherein calculating the cost difference of a candidate replacement circuit Cl_i with respect to the corresponding target circuit CT_i comprises summing the costs of the legs of the circuit Cl_i that do not overlap with the legs of the target circuit CT_i .
- 11. (New) The method of claim 10 wherein calculating the cost difference further comprises excluding a cost associated an unused leg of the target circuit CT_i.

- 12. (New) The method of claim 9 wherein the cost of a circuit is the sum of the cost of each circuit leg.
- 13. (New) The method of claim 9 further comprising, after processing all demands R_i, determining whether the current set of feasible intermediate circuits Cl_i is sufficiently close to the set of target circuits CT_i to take the sequence with which circuits Cl_i have been replaced as the series of single circuit movements to re-route the network, or whether to repeat step (b) using the current set of feasible intermediate circuits Cl_i.
- 14. (New) The method of claim 13 wherein the determination is made based on the overall distance cost between the CA circuits and the CI circuits.
- 15. (New) The method of claim 13 wherein the determination is made based on the overall distance cost between the CI circuits and the CT circuits.
- 16. (New) The method of claim 9 further comprising providing the identified sequence of single circuit movements to a network manager for implementation on the network.
- 17. (New) The method of claim 16 further comprising performing the identified the series of single circuit movements on a network by the network manager.

- 18. A telecommunications network comprising:
 - a plurality of circuits that satisfy a corresponding plurality of demands R; and a network simulator operative to identify a series of single circuit movements to re-route the network by:
 - (a) initializing a circuit set CI to CA, wherein CA comprises a set of n actual circuits CA; (i=1, ..., n), each satisfying a corresponding demand R_i, and wherein CI comprises a set of feasible intermediate circuits CI_i which continue to satisfy the demands R_i and which best approximate a series of target circuits CT_i;
 - (b) for each demand R_i still to be processed
 - (i) calculating one or more candidate replacement circuits CI_i, each candidate replacement circuit CI_i satisfying the demand R_i and having a lower cost difference with respect to the corresponding target circuit CT_i than the current circuit CI_i satisfying the demand R_i;
 - (ii) replacing the current circuit Cl_i with the candidate replacement circuit Cl_i having the least cost; and
 - (iii) marking the criterion R_i as having been processed; and
 - (c) identifying the sequence with which circuits Cl_i were replaced as the series of single circuit movements to re-route the network.